Case Study B

Company: ARMOR
Location: Nantes, France
Product: OWA laser ink cartridge
Type: Independent Remanufacturer
Maturity: Experienced
Contact: Laurent Salzat
Phone: +33240384147
E-mail: Laurent.salzat@armor-group.com
Web: www.armor-owa.com

Armor is an Intermediate Sized Enterprise (ISE) based in Nantes, France. Its annual turnover (2014) is €223M with 80% created from exports (up 55% from 2008). The company has 2000 employees (680 in France) across 26 subsidiaries and 11 production sites worldwide. One of its main activities is the remanufacturing of laser cartridges. Armor is a national and European market leader for remanufactured laser printer cartridges. Armor has a strong investment in sustainable innovation and R&D with €1.6M invested annually. Its remanufacturing facilities are located in Poland and Morocco.

Motivation for Remanufacturing

In Europe each year, around 350 million cartridges are sold, 70% of which are not properly processed at the end-of-life. Just 20% of cartridges are in fact collected by OEMs to be remanufactured and/or recycled. At EU level, the CE is being promoted in directives and new standards. Companies and organizations which use printing solutions are engaged with environmental management systems and some of them have to report their corporate social responsibility engagements. Armor provides these organizations with a range of remanufactured cartridges which meet the sustainability expectations of their customers.

Product Description

Armor's OWA range of remanufactured cartridges provide the end user with the knowledge that the cartridge will be properly treated at its end-of-life (remanufacturing in priority and if not possible material recovery). Armor's OWA approach ensures the collection of used cartridges through an online management service provided on its website.

Fig. 3 Armor's OWA solution

Design for Remanufacturing

Most cores collected by Armor are designed by an OEM and typically new cartridges are not designed for remanufacturing. Most cartridges are protected with patents, contain chip sets, are weak or are a made of many different materials which makes them more difficult to remanufacture. Armor has developed specific remanufacturing production lines to answer these challenges. The company sees design for durability and for disassembly as key strategies OEMs need to adopt to increase remanufacturing activities in Europe.

Environmental Benefits

In association with the French Ministry for the Environment, Armor carried out an experimental environmental labelling trial: a flagship commitment under the Grenelle Environment[1] programme, which provides consumers with information on the ecological impact of OWA products. The aim is to guide consumers towards the most environmentally-responsible products. Each LCA is performed with a dedicated tool for each range of OWA products. The CO2 impact of a remanufactured cartridge compared to a new one is 25 - 40% lower. The same tendency is observed for the raw material depletion indicator.

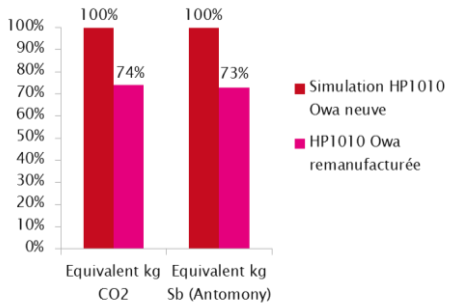

Fig. 4. LCA Results: Environmental impact comparison between a new cartridge and an OWA remanufactured one

Economic Benefits

Remanufacturing of products can reduce product costs by up to 40 or 50%, depending on the type of product. Product price is lower than 30% compared to a new product which is a significant benefit for the consumer.

Social Benefits

Armor's remanufacturing activity creates highly skilled jobs in Europe and North Africa. More than 6% of their employees are disabled people. Among the priority issues for company's growth there is the individual development of its employees and local solidarity.

Business Model

Through its OWA business offering Armor developed a brand proposition that covers not simply printer cartridges, but an overall circular economy solution. The business model assures the customer will get a guaranteed print quality, an optimal cost per page printed and most of all, a reduced environmental footprint compared to classic printing solutions.

Future Challenges

For this independent remanufacturer, the growing number of patents on cartridges technologies is an issue that makes its business activity increasingly complicated. The development of European legislation on waste regulation between states is also an issue for the company which means it has to pay taxes to ship old cartridges outside of France and Europe.

[1] *http://www.developpement-durable.gouv.fr/IMG/pdf/Grenelle_Loi-2_GB_.pdf*